

Listing of Claims

This listing of claims will replace all previous listings of claims in this application.

Please amend Claims 1, 32, and 38 as shown below. Please cancel Claims 3, 5-11, 13-28, 34-37, and 39-41. Please add Claims 42-62 as shown below.

We claim:

1. (Currently amended) A computerized method for creating a three dimensional model from image panoramas, the method comprising: receiving at a computer a plurality of image panoramas representing a visual scene and having an object, the object occupying a field of view of more than 180 degrees in the panoramas; using the computer to ~~determining~~ a directional vector for each image panorama, the directional vector indicating an orientation of the visual scene with respect to a reference coordinate system; using the computer to ~~transforming~~ the image panoramas such that the directional vectors are substantially aligned relative to the reference coordinate system; using the computer to ~~aligning~~ the transformed image panoramas to each other; and, using the computer to, ~~creating~~ a three dimensional model of the visual scene from the transformed and aligned image panoramas using the reference coordinate system, wherein creating a three dimensional model includes ing ~~ing~~.

~~a. identifying at least one boundary of the object and using the identified boundary to associate geometry information with the object, the geometry information comprising 3-D coordinates describing the position and orientation of the object boundary in the reference coordinate system;~~

~~using the computer to identify a reference plane within the transformed aligned image panoramas;~~

~~b. using the computer to identify an outline of the base of the object in the reference plane, and~~

~~using the computer to extrude the sides of the object from the outline of the object base in the reference plane to the height of the object in the transformed aligned image panoramas to create a three dimensional model of the object.~~

2. (previously presented) The method of claim 1 wherein the directional vector is determined based, at least in part, on instructions identifying elements of the image panoramas received from a user.

3-31. Cancelled.

32. (Currently amended) A system for creating a three dimensional model from a plurality of image panoramas, the system comprising: means for receiving the image panoramas representing a visual scene having an object; the object

occupying a field of view of more than 180 degrees in the panoramas, means for allowing a user to interact with the system to determine a directional vector for each image panorama; means for aligning the image panoramas relative to each other; and means for creating a three dimensional model from the aligned panoramas, wherein creating a three dimensional model includes: ~~identifying at least one boundary of the object and using the identified boundary to associate geometry information with the object the geometry information comprising 3-D coordinates describing the position and orientation of the object boundary in a reference coordinate system~~
—identifying a reference plane within the aligned image panoramas—
identifying an outline of the base of the object in the reference plane, and
extruding the sides of the object from the outline of the object base in the reference plane to the height of the object in the aligned image panoramas to
create a three dimensional model of the object.

33. (previously presented) The system of claim 32, wherein the input image panoramas comprise two-dimensional images.

34-37. Cancelled.

38. (Currently amended) A computerized method for creating a three dimensional model from an image panorama, the method comprising: receiving an image panorama representing a visual scene and having an object, the

object occupying a field of view of more than 180 degrees in the panorama; and creating a three dimensional model of the visual scene using a computer from the image panorama using the reference coordinate system, wherein creating a three dimensional model includes:

~~identifying at least one boundary of the object and using the identified boundary to associate geometry information with the object, the geometry information comprising 3-D coordinates describing the position and orientation of the object boundary in the reference coordinate system.~~ using the computer to identify a reference plane within the image panorama,
using the computer to identify an outline of the base of the object in the reference plane, and
using the computer to extrude the sides of the object from the outline of the object base in the reference plane to the height of the object in the image panorama to create a three dimensional model of the object.

39-41 Cancelled

42. (New) The method of claim 1 wherein creating a three dimensional model further includes:

using a pointing device to identify the height of the object in the transformed aligned image panoramas.

43. (New) The method of claim 1 wherein the base of the object is curved.

44. (New) The method of claim 1 wherein creating a three dimensional model further includes:

then using the computer to rotate the reference plane to correspond to at least a portion of the object, using the computer to identify an outline of the base of a second object in the rotated reference plane, and using the computer to extrude the sides of the second object from the outline of the object base in the rotated reference plane to the height of the object in the transformed aligned image panoramas to create a three dimensional model of the second object.

45. (New) The method of claim 44 wherein creating a three dimensional model further includes:

using the computer to copy and paste the second object onto another portion of the object.

46. (New) The method of claim 1 wherein creating a three dimensional model further includes using the computer to rotate and translate the reference plane to correspond to at least a portion of the object.

47. (New) The method of claim 1 wherein the base of the object is identified by edge detection.

48. (New) The method of claim 1 wherein creating a three dimensional model further includes:

using the computer to project a texture from the transformed aligned image panoramas onto the three dimensional model of the object.

49. (New) The system of claim 32 wherein creating a three dimensional model further includes:

using a pointing device to identify the height of the object in the aligned image panoramas.

50. (New) The system of claim 32 wherein the base of the object is curved.

51. (New) The system of claim 32 where creating a three dimensional model further includes:

then rotating the reference plane to correspond to at least a portion of the object,

identifying an outline of the base of a second object in the rotated reference plane, and

extruding the sides of the second object from the outline of the object base in the rotated reference plane to the height of the object in the aligned image panoramas to create a three dimensional model of the second object.

52. (New) The system of claim 51 wherein creating a three dimensional model further includes:

copying and pasting the second object onto another portion of the object.

53. (New) The system of claim 32 wherein creating a three dimensional model further includes rotating and translating the reference plane to correspond to at least a portion of the object.
54. (New) The system of claim 32 wherein the base of the object is identified by edge detection.
55. (New) The system of claim 32 wherein creating a three dimensional model further includes:
- projecting a texture from the aligned image panoramas onto the three dimensional model of the object.
56. (New) The method of claim 38 wherein creating a three dimensional model further includes:
- using a pointing device to identify the height of the object in the image panorama.
57. (New) The method of claim 38 wherein the base of the object is curved.
58. (New) The method of claim 38 wherein creating a three dimensional model further includes:
- then using the computer to rotate the reference plane to correspond to at least a portion of the object,
- using the computer to identify an outline of the base of a second object in the rotated reference plane, and
- using the computer to extrude the sides of the second object from the outline of the object base in the rotated reference plane to the

height of the object in the image panorama to create a three dimensional model of the second object.

59. (New) The method of claim 58 wherein creating a three dimensional model further includes:

using the computer to copy and paste the second object onto another portion of the object.

60. (New) The method of claim 38 wherein creating a three dimensional model further includes using the computer to rotate and translate the reference plane to correspond to at least a portion of the object.

61. (New) The method of claim 38 wherein the base of the object is identified by edge detection.

62. (New) The method of claim 38 wherein creating a three dimensional model further includes:

using the computer to project a texture from the image panorama onto the three dimensional model of the object.